

INTERNATIONAL SEARCH REPORT

PCT/GB2005/000308

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N1/28 G01N27/447 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N C12Q B01L C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-------------------------|
| X | US 2002/045246 A1 (MCMILLAN WILLIAM A ET AL) 18 April 2002 (2002-04-18) abstract; figure 2 paragraph '0098! - paragraph '0099! paragraph '0068! - paragraph '0205! ----- | 1-6, 8-17, 19-32 |
| X | US 6 544 734 B1 (BRISCOE CYNTHIA G ET AL) 8 April 2003 (2003-04-08) column 1, line 39 - column 2, line 47 column 3, line 3 - column 6, line 8 abstract; figures 1,3 ----- -/-- | 1-8, 17-19, 22-30 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

24 May 2005

Date of mailing of the international search report

08/06/2005

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|-------------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | US 2003/138941 A1 (GONG HAIQING ET AL) 24 July 2003 (2003-07-24) paragraph '0082! - paragraph '0087!; figures 1,11a,11b | 1-8, 12-17, 22-30 |
| Y | paragraph '0095! - paragraph '0102! paragraph '0120! - paragraph '0121! paragraph '0149! - paragraph '0153! paragraph '0158! - paragraph '0198! | 19,20 |
| Y | DE 197 00 364 A1 (BAYER AG, 51373 LEVERKUSEN, DE) 9 July 1998 (1998-07-09) page 2, line 25 - page 2, line 57 | 19,20 |
| X | JOON-HO KIM ET AL: "A disposable DNA sample preparation microfluidic chip for nucleic acid probe assay" PROCEEDINGS OF THE IEEE 15TH. ANNUAL INTERNATIONAL CONFERENCE ON MICROELECTRO MECHANICAL SYSTEMS. MEMS 2002. LAS VEGAS, NV, JAN. 20 - 24, 2002, IEEE INTERNATIONAL MICRO ELECTRO MECHANICAL SYSTEMS CONFERENCE, NEW YORK, NY : IEEE, US, vol. CONF. 15, 2002, pages 133-136, XP010577613 ISBN: 0-7803-7185-2 the whole document | 9-12, 26-32 |
| X | WO 00/62931 A (CLINICAL MICRO SENSORS, INC; KAYYEM, JON, FAIZ) 26 October 2000 (2000-10-26) page 7, line 10 - page 16, line 22; figures page 38, line 28 - page 40, line 10 | 1-8, 12-17, 22-31 |
| P,X | WO 2004/096443 A (NOVEMBER AKTIENGESELLSCHAFT GESELLSCHAFT FUER MOLEKULARE MEDIZIN; BART) 11 November 2004 (2004-11-11) the whole document | 1-32 |
| A | US 5 229 297 A (SCHNIPELSKY ET AL) 20 July 1993 (1993-07-20) the whole document | 1-32 |
| A | EP 0 987 327 A (QIAGEN GMBH) 22 March 2000 (2000-03-22) abstract; claims 17,19,20 | 7,24,25 |
| A | PRINZ ET AL.: "Bacterial Chromosome extraction and isolation" LAB CHIP, vol. 2, 2002, pages 207-212, XP009047795 the whole document | 1-32 |
| | -/-- | |

INTERNATIONAL SEARCH REPORT

PCT/GB2005/000308

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | <p>SCHILLING E A ET AL: "CELL LYSIS AND PROTEIN EXTRACTION IN A MICROFLUIDIC DEVICE WITH DETECTION BY A FLUOROGENIC ENZYME ASSAY"</p> <p>ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 74, no. 8, 15 April 2002 (2002-04-15), pages 1798-1804, XP001115858</p> <p>ISSN: 0003-2700</p> <p>the whole document</p> | 1-32 |
| A | <p>WATERS L C ET AL: "MICROCHIP DEVICE FOR CELL LYSIS, MULTIPLEX PCR AMPLIFICATION, AND ELECTROPHORETIC SIZING"</p> <p>ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 70, no. 1, January 1998 (1998-01), pages 158-162, XP000733220</p> <p>ISSN: 0003-2700</p> <p>the whole document</p> | 1-32 |
| A | <p>ZHANG N ET AL: "AUTOMATED AND INTEGRATED SYSTEM FOR HIGH-THROUGHPUT DNA GENOTYPING DIRECTLY FROM BLOOD"</p> <p>ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 71, no. 6, 15 March 1999 (1999-03-15), pages 1138-1145, XP000831550</p> <p>ISSN: 0003-2700</p> <p>the whole document</p> | 1-32 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/GB2005/000308

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|--|--|
| US 2002045246 A1 | 18-04-2002 | US 6440725 B1 US 2002042125 A1 US 2002039783 A1 US 2002055167 A1 US 2002187547 A1 US 2001012612 A1 US 2002019060 A1 | 27-08-2002 11-04-2002 04-04-2002 09-05-2002 12-12-2002 09-08-2001 14-02-2002 |
| US 6544734 B1 | 08-04-2003 | US 6572830 B1 US 6592696 B1 AU 2082701 A CA 2393690 A1 EP 1237655 A2 JP 2003517591 T WO 0141931 A2 US 2003129646 A1 US 2003190608 A1 AT 236719 T AU 6418499 A CA 2346059 A1 DE 69906772 D1 DE 69906772 T2 EP 1314472 A1 EP 1123157 A1 ES 2197681 T3 JP 2002527254 T WO 0021659 A1 US 2003118481 A1 US 6527890 B1 | 03-06-2003 15-07-2003 18-06-2001 14-06-2001 11-09-2002 27-05-2003 14-06-2001 10-07-2003 09-10-2003 15-04-2003 01-05-2000 20-04-2000 15-05-2003 11-03-2004 28-05-2003 16-08-2001 01-01-2004 27-08-2002 20-04-2000 26-06-2003 04-03-2003 |
| US 2003138941 A1 | 24-07-2003 | EP 1440168 A2 JP 2005506541 T WO 03035229 A2 EP 1461454 A2 WO 03035909 A2 US 2003138819 A1 | 28-07-2004 03-03-2005 01-05-2003 29-09-2004 01-05-2003 24-07-2003 |
| DE 19700364 A1 | 09-07-1998 | AU 5985798 A WO 9830571 A1 EP 0958300 A1 JP 2001509258 T | 03-08-1998 16-07-1998 24-11-1999 10-07-2001 |
| WO 0062931 A | 26-10-2000 | AT 256500 T AU 771571 B2 AU 4368000 A CA 2370879 A1 DE 60007306 D1 DE 60007306 T2 DK 1183102 T3 EP 1183102 A1 EP 1391241 A1 ES 2213009 T3 JP 2002542461 T PT 1183102 T WO 0062931 A1 | 15-01-2004 25-03-2004 02-11-2000 26-10-2000 29-01-2004 16-09-2004 19-04-2004 06-03-2002 25-02-2004 16-08-2004 10-12-2002 31-05-2004 26-10-2000 |
| WO 2004096443 A | 11-11-2004 | DE 10319045 A1 WO 2004096443 A1 | 09-12-2004 11-11-2004 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/GB2005/000308

| Patent document cited in search report | | Publication - date | Patent family member(s) | Publication date |
|---|---|-----------------------|----------------------------|---------------------|
| US 5229297 | A | 20-07-1993 | CA 1338505 C | 06-08-1996 |
| | | | DE 69009510 D1 | 14-07-1994 |
| | | | DE 69009510 T2 | 05-01-1995 |
| | | | DK 381501 T3 | 04-07-1994 |
| | | | EP 0381501 A2 | 08-08-1990 |
| | | | FI 94360 B | 15-05-1995 |
| | | | IE 63501 B1 | 03-05-1995 |
| | | | JP 2536945 B2 | 25-09-1996 |
| | | | JP 3007571 A | 14-01-1991 |
| | | | KR 161276 B1 | 16-11-1998 |
| | | | KR 161352 B1 | 01-10-1999 |
| | | | US 6645758 B1 | 11-11-2003 |
| | | | AT 130373 T | 15-12-1995 |
| | | | AU 1664092 A | 21-10-1992 |
| | | | CA 2083173 A1 | 22-09-1992 |
| | | | DE 69206080 D1 | 21-12-1995 |
| | | | DE 69206080 T2 | 13-06-1996 |
| | | | EP 0530357 A1 | 10-03-1993 |
| | | | ES 2081613 T3 | 01-03-1996 |
| | | | FI 925285 A | 20-11-1992 |
| | | | JP 8030704 B | 27-03-1996 |
| | | | JP 5507362 T | 21-10-1993 |
| | | | WO 9216659 A1 | 01-10-1992 |
| EP 0987327 | A | 22-03-2000 | EP 0987327 A1 | 22-03-2000 |
| | | | AT 235548 T | 15-04-2003 |
| | | | DE 69906210 D1 | 30-04-2003 |
| | | | DE 69906210 T2 | 12-02-2004 |
| | | | EP 0992583 A1 | 12-04-2000 |
| | | | JP 3304932 B2 | 22-07-2002 |
| | | | JP 2000093171 A | 04-04-2000 |
| | | | US 6242220 B1 | 05-06-2001 |